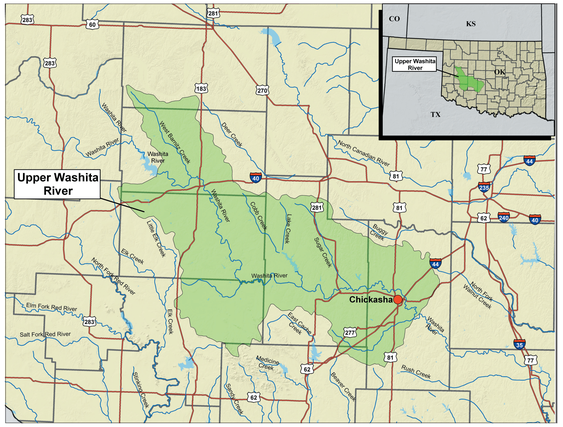
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Upper Washita River, Oklahoma: 2004-2006

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Evaluate conservation practices effects on soil quality, water quality and quantity, and wildlife habitat.

Watershed Description

- About 2 million acres
- Predominantly agricultural
- Streams have been designated impaired water bodies by Oklahoma.
- Impaired water quality parameters: phosphorus, turbidity, oxygen, and pathogens.
- A Total Maximum Daily Load (TMDL) limit is planned for phosphorus and turbidity.

Issues: Runoff carries sediment and excess nutrients to Lake Texoma, the second largest reservoir in Oklahoma.

*Agricultural Research Service

Approach

Water sampling: Phosphorus, nitrate-nitrogen, and sediment

Watershed models: SWAT (Soil and Water Assessment Tool), EPIC (Erosion Productivity-Impact Calculator), APEX (Agricultural Policy Environmental Extender), and CONCEPTS (Conservational Channel Evolution and Pollutant Transport System)

Research: Hydrologic data from 1961 to the present will be used to calibrate computer models. Farmer surveys will be correlated with water quality sampling; Oklahoma Conservation Commission will assess stream habitat.

Communicating Results

A model will be developed to predict reductions in sediment and nutrients from conservation practices. Reports will describe the hydrology, calibration of models, effects of practices on water quality and water supply.

Collaborators

- USDA, ARS National Soil Erosion Laboratory
- USDA, Natural Resources Conservation Service
- U.S. Geological Survey
- U.S. Environmental Protection Agency
- Great Plains Resource Conservation & Development
- Local landowners
- Oklahoma Conservation Commission
- Oklahoma Climatological Survey
- University of Oklahoma
- Oklahoma State University

Contacts

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Field harvest in Upper Washita Watershed, Oklahoma.

Dr. McIntyre (Support Scientist, Ecologist) taking water quality measurements in a stream in the Fort Cobb Watershed in Upper Washita, Oklahoma.

Farmer working his field in Upper Washita Watershed, Oklahoma.

Timeline

2003
Initial funding

2004
August CEAP bibliographies

2005
May Wetlands peer review
July Wildlife literature review (program-based)
October Cropland literature reviews
Wildlife literature review (practice-based)
Wildlife Work Plan
November Wetlands Work Plan
December Draft findings—Prairie Pothole region
1st ARS Benchmark Watersheds progress report

2006
February Preliminary habitat quality models—Prairie Potholes wetland region
March Preliminary National Assessment Report
December 2nd ARS Benchmark Watersheds progress report

2007
Fall National Assessment Final Report
December 3rd ARS Benchmark Watersheds progress report

2008
December 4th ARS Benchmark Watersheds progress report

www.nrcs.usda.gov/technical/nri/ceap/